CLAIMS

We claim:

1. A safety system for controlling the movement of an automatically operated overhead door, the automatic overhead door including an overhead door that moves in a vertical direction and that rides in two tracks on either side of the door, an electric motor, means for connecting the motor to the door so that when the motor turns in one direction the door lowers, and when the motor turns in the opposite direction, the door rises, and a control system for starting and stopping the motor thereby controlling movement of the door, the safety system comprising:

a pair of spring-loaded leg assemblies mounted on either side of the door near the door's leading edge;

each leg assembly has an outer tube and at least one inner tube having an exterior dimension smaller than the interior dimension of the outer tube so that the inner tube can be telescopically inserted into the outer tube;

a spring mounted inside the tubes to apply an outward axial force between the tubes;

an optical transmitter mounted on the inner-most tube of one leg;

an optical receiver mounted on the inner-most tube of the other leg, said optical transmitter sending an optical beam to the optical receiver;

sensing circuit electrically connected to at least the optical receiver for determining if the optical beam is broken, said sensing circuit connected to the control system for controlling operation of the motor.

2. The safety system of claim 1 wherein the motor is stopped which stops door, when the optical beam is broken.

3. The safety system of claim 1 wherein the motor is reversed thereby reversing travel of the door when the optical beam is broken.

4. The safety system of claim 1 wherein said leg assembly comprises one outer tube and one inner tube.

5. The safety system of claim 1 wherein said leg assembly comprises one outer tube and two inner tubes, the first inner tube having an exterior dimension that is smaller than the interior dimension of the outer tube, the second inner tube having an exterior dimension that is smaller than the interior dimension of the first inner tube thereby allowing the second inner tube to telescopically nest within said first inner tube and allowing said first inner tube to telescopically nest within said outer tube.

6. The safety system of claim 1 wherein the length of said leg assemblies are designed to hold the optical transmitter and the optical receiver at the appropriate distance in front of the leading edge of the overhead door to accommodate the over-travel of the overhead door.

7. The safety system of claim 6 wherein the length of the leg assemblies can be adjusted by changing the lengths of the tubes.

8. The safety system of claim 6 wherein the length of the leg assemblies can be adjusted by changing the number of inner tubes.

9. The safety system of claim 1 wherein the tubes have a square cross-section.

10. The safety system of claim 1 wherein the tubes have a circular cross-section.

11. The safety system of claim 1 wherein the outer tubes contain a number of hatch marks which may be used for aligning the leg assemblies.

12. The safety system of claim 1 further comprising metal tabs on the outer tube for attaching said leg assemblies to the door.

13. The safety system of claim 1 further comprising a pin and slot arrangement in the tubes to limit the nesting of the inner tubes within the outer tube.

14. A safety system comprising in combination:

an automatically operated overhead door assembly, the automatic door assembly including an overhead door that moves in a vertical direction and that rides in two tracks on either side of the door;

an electric motor;

means for connecting the motor to the door so that when the motor turns in one direction the door lowers, when the motor turns in the opposite direction the door rises, and when the

motor stops the door stops; and

a control system for starting, reversing direction and stopping the motor thereby controlling movement of the door;

a pair of spring-loaded leg assemblies mounted on either side of the door near the door's leading edge;

each leg assembly has an outer tube and at least one inner tube having an exterior dimension smaller than the interior dimension of the outer tube so that the inner tube can be telescopically inserted into the outer tube;

a spring mounted inside the tubes to apply an outward axial force between the tubes telescopically tending to extend the tubes to their maximum length but allows the legs to telescopically contract when the inner tube engages the ground as the door lowers ;

an optical transmitter mounted on the inner-most tube of one leg;

an optical receiver mounted on the inner-most tube of the other leg, said optical transmitter sending an optical beam to the optical receiver such that the optical beam acts as a constructive leading edge of the door;

a sensing circuit electrically connected to at least the optical receiver for determining if the constructive leading edge engages an object, said sensing circuit connected to the control system for controlling operation of the motor.

15. The safety system of claim 14 further comprising a pin and slot arrangement in the tubes to limit the nesting of the inner tubes within the outer tube.

16. The safety system of claim 15 wherein the length of the leg assemblies can be adjusted by changing the lengths of the tubes.

17. The safety system of claim 15 wherein the length of the leg assemblies can be adjusted by changing the number of inner tubes.